

## CLAIMS

### What is claimed is:

1. A method comprising:  
adapting an all-terrain-vehicle transmission (ATV) shaft for coupling thereto;  
configuring an ATV transmission cover to allow the ATV transmission shaft to pass through the ATV cover; and  
modifying an ATV sub-transmission shift plate to provide a neutral position for the transmission, wherein the neutral position disconnects power to ATV wheels while providing power to the ATV transmission shaft.
2. The method of claim 1, further comprising:  
coupling a power takeoff unit to the ATV transmission shaft.
3. The method of claim 2, wherein the coupling is accomplished using a spline.
4. The method of claim 2, wherein the coupling is accomplished using a slot.
5. The method of claim 2, wherein the power takeoff unit comprises a hydraulic pump.

6. The method of claim 5, further comprising:  
installing a flange on the ATV transmission cover, wherein the flange is configured to receive the hydraulic pump.
7. The method of claim 1, wherein the adapting further comprises:  
creating a slot in the ATV transmission shaft.
8. The method of claim 1, wherein the modifying further comprises:  
placing a notch between two of the existing gear positions.
9. The method of claim 8, wherein the notch is placed between a high gear position and a low gear position.
10. The method of claim 8, wherein the notch is placed between a low gear position and a super low gear position.
11. The method of claim 1, wherein the ATV transmission is a transmission used in an Artic Cat 250 or an Artic Cat 300 ATV.
12. The method of claim 1, wherein the ATV transmission is a transmission used in a Suzuki LT-F4WDX or a Suzuki LT-F4WD ATV.
13. A method comprising:

placing an all-terrain-vehicle transmission (ATV) shaft in an all-terrain-vehicle transmission housing, wherein the ATV transmission shaft is configured for coupling thereto;

coupling to the ATV transmission shaft through the ATV housing; and  
providing power to a power takeoff unit.

14. The method of claim 13, wherein the power takeoff unit is attached to the ATV transmission housing.

15. The method of claim 13, wherein the power takeoff unit is part of the ATV transmission housing.

16. The method of claim 13, wherein the ATV transmission is a transmission used in an Artic Cat 250 or an Artic Cat 300 ATV.

17. The method of claim 13, wherein the ATV transmission is a transmission used in a Suzuki LT-F4WDX or a Suzuki LT-F4WD ATV.

18. An apparatus comprising:

an all terrain vehicle (ATV) transmission, having a transmission shaft and a transmission housing, wherein the transmission shaft is configured to facilitate coupling thereto; and

a transmission shaft extension releaseably connectable with the transmission shaft, the transmission housing having an opening through which the transmission shaft extension can be accessed such that energy can be transferred to an external device.

19. The apparatus of claim 18, wherein the external device is a power takeoff unit.

20. The apparatus of claim 19, wherein the power takeoff unit includes a hydraulic pump.

21. The apparatus of claim 18, further comprising:

a sub-transmission shift plate, the sub-transmission shift plate containing a position to place the transmission in neutral such that power is not transferred to the wheels of the ATV when the sub-transmission shift plate is oriented in the position.

22. The apparatus of claim 21, wherein the position is between a high gear position and a low gear position.

23. The apparatus of claim 21, wherein the position is between a low gear position and a super low gear position.

24. The apparatus of claim 18, wherein the ATV transmission is a transmission used in an Artic Cat 250 or an Artic Cat 300 ATV.

25. The apparatus of claim 18, wherein the ATV transmission is a transmission used in a Suzuki LT-F4WDX or a Suzuki LT-F4WD ATV.

26. An apparatus comprising:

an all terrain vehicle transmission, having a transmission shaft and a transmission housing, wherein the transmission shaft is configured to facilitate coupling thereto; and

an opening in the transmission housing, through which the transmission shaft can be accessed such that energy can be transferred to an external device.

27. The apparatus of claim 26, wherein the external device is a power takeoff unit.

28. The apparatus of claim 26, wherein the ATV transmission is a transmission used in an Artic Cat 250 or an Artic Cat 300 ATV.

29. The apparatus of claim 26, wherein the ATV transmission is a transmission used in a Suzuki LT-F4WDX or a Suzuki LT-F4WD ATV.

30. An apparatus comprising:

a housing mountable on an all terrain vehicle (ATV);

a rotating shaft having a variable orientation, wherein power to rotate the shaft is diverted from a transmission shaft of the ATV.

31. The apparatus of claim 30, wherein the variable orientation is provided by a device selected from the group consisting of a universal joint, a flexible shaft and mating gears.

32. The apparatus of claim 31, further comprising:

a hydraulic pump, wherein the hydraulic pump is powered by the rotating shaft.

33. The apparatus of claim 32, further comprising:

a hydraulic fluid reservoir coupled with the hydraulic pump.

34. The apparatus of claim 32, further comprising:

a hydraulic valve coupled with the hydraulic pump.

35. The apparatus of claim 32, further comprising:

a control adapted to control a flow of hydraulic fluid.

36. The apparatus of claim 35, wherein the control is configured to operate the valve with a remote device employing wireless communication.

37. The apparatus of claim 32, further comprising:  
a fluid cooler, the fluid cooler configured to cool hydraulic fluid that passes through the cooler.
38. The apparatus of claim 32, wherein the control is configured to regulate the speed of an engine powering the ATV.
39. The apparatus of claim 38, wherein the control is configured to regulate the speed of an engine powering the ATV with a remote device employing wireless communication.
40. An apparatus comprising:  
a means for coupling to an all terrain vehicle (ATV) transmission shaft;  
and  
a means for fastening a power takeoff unit to an ATV transmission.
41. The apparatus of claim 40, further comprising:  
a means for placing an vehicle transmission in a neutral position while maintaining power to the ATV transmission shaft.
42. The apparatus of claim 40, wherein the ATV transmission is a transmission used in an Artic Cat 250 or an Artic Cat 300 ATV.

43. The apparatus of claim 40, wherein the ATV transmission is a transmission used in a Suzuki LT-F4WDX or a Suzuki LT-F4WD ATV.